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# ABSTRACTS OF TUBERCULOSIS

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**Bronchopulmonary Spirochaetosis.**—Four cases are reported, illustrating the relationship between spirillosis of the respiratory passages and war wounds of the thorax. It is of distinct benefit to the patient that an early diagnosis is made, so that proper treatment may be instituted. Good results were obtained by the use of arsenobenzol.—*Spirochétose bronchopulmonaire chez les blessés du thorax par projectile de guerre, A. Pellé, Meeting, Soc. Méd. d. Hôp., December 3, 1926, reported in Prog. Méd., December 25, 1926, no. 53, 2042.*—(*U. E. Z.*)

**Spirillosis Following Chronic Tonsillitis.**—*Case Report:* A man, 36 years of age, developed after tonsillitis painful swellings of the lymph nodes above the sternoclavicular joint. The fever was moderate, but the feeling of fatigue was very pronounced. After the removal of the tonsils his general condition did not improve, and soon purulent expectoration began. The X-ray picture of the chest did not show any pathological changes. He developed an erythema on his legs which had the appearance of an erysipelas. In blood cultures, which were obtained at this time, numerous spirochaetes were found on the fifth day. Similar microörganisms were detected in the sputum. This spirochaete was not pathogenic for rats, mice nor guinea pigs. It could be cultivated on defibrinated human blood. Its size was very variable. Since it is not known that spirochaetes may occur in the human blood-stream without causing disease, as is the case in certain animals, the author inclines to the belief that this spirochaete is the etiological factor in the disease reported.—*Spirillose nach chronischer Tonsilitis, B. Busson, Wien. klin. Wchnschr., June 9, 1927, xl, 748.*—(*M. P.*)

**Actinomycosis of Lungs.**—Actinomycosis in the United States is most prevalent in the agricultural districts of the upper Mississippi Valley and the Northwestern United States. The incidence of the infection in the lungs is between 10 and 20 per cent, but primary involvement of the lungs is rare. In man the lesions are usually suppurative, with the formation of granulation tissue. In the lungs the lesions are of four types: the *bronchitic* type, characterized by the presence of pus and fungi in the bronchi alone, probably the beginning of the lesion acquired by inhalation; the *pneumonic* type, spreading from the bronchi to surrounding alveoli, and resembling an ordinary bronchopneumonia in its first appearance and

progress; the *pleuropneumonic* type, in which the abscesses have grown larger, and pus has burrowed to the pleural cavity, frequently invading the chest-wall; and the type in which there are *metastatic nodules*, supposed to be carried by the blood-stream. Differential diagnosis from lung abscesses from other causes is frequently impossible until the terminal stage. The sputum may have a foetid odor, may contain a little blood, or may be thin and watery. Helpful points of differentiation from pulmonary tuberculosis are that the lower lobes are usually first affected in actinomycosis, lymph nodes are never involved, pain is a common symptom, cavity formation is rare, it spreads by continuity with frequent abscess-formation, there are frequent sinuses in the chest-wall, and it often spreads through the diaphragm. Although actinomycosis is very rare in children, an unusual case is reported in a boy aged 8 years, of 16 months' duration, diagnosed variously as bronchopneumonia and pleurisy, and advanced tuberculosis. There were numerous small nodules uniformly distributed throughout the lungs, with no large accumulations of pus and no sinuses to the pleural cavity or chest-wall. The diaphragm was covered with exudate, but the only abdominal organ involved was the right suprarenal. There was a large amount of sputum and although no tubercle bacilli were found, the diffuse infection of the lungs led to confusion with pulmonary tuberculosis.—*Actinomycosis of Lungs and Suprarenals, J. T. Christison and M. Warwick, J. Am. M. Ass., September 24, 1927, lxxxix, 1043.*—(*G. L. L.*)

**Pulmonary Aspergillosis.**—A woman was under observation for many months, who, from the age of 26 to the age of 53, had frequent and copious pulmonary haemorrhages and in whose sputum tubercle bacilli could never be demonstrated. Her sputum constantly contained filaments of aspergillus. In rabbits the disease was reproduced by infection and the aspergillus was recovered from the experimental lesions. Numerous bronchial dilatations were formed in the animals, demonstrable roentgenologically after lipiodol injection. The patient was treated with iodine and with aspergillus antigens.—*Aspergillose pulmonaire cliniquement primitive. Recherches expérimentales, Macaigme and Nicaud, meeting, Soc. méd. d. hôp., July 1, 1927, reported in Prog. Méd., July 9, 1927, no. 28, 1094.*—(*M. P.*)

**Humoral and Skin Reactions in Aspergillosis.**—It was not possible to demonstrate agglutinins or complement-fixing antibodies in aspergillus serum. Aspergillus antigens produce long-lasting nodular reactions in patients with aspergillosis. Repeated intracutaneous injections cause focal reactions of a congestive nature, similar to tuberculin reactions in tuberculous patients.—*Les réactions humorales dans l'aspergillose pulmonaire. Recherches sur la sporoagglutination, sur la réaction de fixation et sur les réactions antigénétiques aspergillaires. Intradermoréaction et réaction antigénétique focale, Macaigne and Nicaud, Meeting, Soc. méd. d. Hôp., July 1, 1927, reported in Prog. Méd., July 9, 1927, no. 28, 1094.*—(*M. P.*)

**Case of Atypical Tuberculosis with Pulmonary Aspergillosis.**—A 49-year-old woman died of an acute condition three days after admission to the hospital. The disease ran a 17-day course. Autopsy revealed pulmonary foci containing numerous Aspergilli; and the remaining organs, the intestines, kidney, bone-marrow and heart muscle contained many tuberculous necrotic foci, which resembled infarcts in the slpeen. A lack of reaction was indicated by an absence of epithelioid-cell tubercles or giant cells. In the necrotic foci were numerous acid-fast rods. Animal inoculations with lymph nodes revealed a strain of tubercle bacilli that was not virulent for birds, but markedly virulent for guinea pigs and also virulent for rabbits.—*Beiträge zur Frage der atypischen Tuberkulosen. I. Mitt.: Sepsis tuberculosa acutissima und atypische Tuberkulosen mit vorwiegendem Befallensein des lymphatischen Systems. Zugleich ein Beitrag zu den primären Schimmelmykosen der menschlichen Lunge, A. Esser, Beitr. z. Klin. d. Tuberk., 1926, lxiii, 699.*—(*H. J. C.*)

**Pseudotuberculosis Aspergillina.**—Infection with *Aspergillus fumigatus* was found among a number of penguins of the Hagenbeck menagery. The aspergillus also produced a pseudotuberculosis in chickens and guinea pigs.—*Über einige Fälle von Pseudotuberculosis aspergillina, H. Franke, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 601.*—(*H. J. C.*)

**Tuberculosis and Pneumonokoniosis.**—On the basis of 5 carefully studied clinical cases of tuberculosis, including roentgen pictures and four autopsies, in which the pathological and clinical picture showed a combination of pneumonokoniosis and tuberculosis, the author discusses the diagnostic difficulties and the problem of whether pneumonokoniosis favors tuberculosis or *vice versa*. The chronic character of

the tuberculosis unquestionably is dependent upon the pneumonokoniosis.—*Zur Kenntnis der Beziehungen zwischen Tuberkulose und Staublunge, F. Eickenbusch, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 750.*—(*H. J. C.*)

**Silicosis as Industrial Hazard.**—An extensive survey of pneumonokoniosis was made on the North American Continent by the mine operators of the Porcupine group of gold mines in northern Ontario, bringing silicosis under the status of a compensable industrial disease. "Miners phthisis" is used to describe a definite pulmonary disease due to occupational conditions. "Silicosis" is the pathological condition necessary for an individual case to be classified as "miners phthisis." The disease has been classified into "anteprimary," "primary," and "secondary" stages. These standards do not fit exactly the clinical stages, since one step merges into the next by a series of clinical as well as roentgenological advances. The appearance of the roentgenographs in the various stages is as follows: *Anteprimary Stage:* The linear markings may not be so pronounced as in many cases of "more fibrosis than usual," but the parenchymal tissue supports fine, fluffy, isolated mottlings, about the size of a pin or match-head. *Primary Silicosis:* The early appearance is an exaggeration of the well-established, minute or large snowflake appearance, without mass-formation, but with a beginning coalescence of the snowflake mottling into clusters, and scattered in snowstorm appearance throughout the lungs. *Secondary Silicosis:* In uncomplicated silicosis the distribution of the fibrotic areas is fairly uniform from apex to base. The fine, soft, irregular mottlings, fading off at their edges, are each about the size of a pea, and vary slightly in respective density in different parts of the lung, some showing faint fibrosis, and others an almost calcific density. *Summary: 1:* The local incidence of silicosis is low in comparison with the Rand of South Africa. *2:* The pulmonary condition, as roentgenographed, presents here a picture with contrastingly softer shadows than those from South Africa. *3:* The condition is of much less serious nature and would seem to be caused by rock dust (1) other than silica, and (2) containing a small percentage of silicious dust mixed with that from silicates and other accessory minerals. *4:* Tuberculosis is the predominating serious factor, but does not exist to nearly the same extent or violence as in South Africa.—*Silicosis as an Industrial Hazard in Ontario Gold Mining, O. J. Hague, and D. R. and R. W. McBain, Am. J. Roentgenol. & Rad. Ther., October, 1927, xviii, 315.*—(*W. I. W.*)

**Silicosis among South African Gold Miners.**—Several clinical forms of silicosis are recognized: *1: Simple silicosis*, characterized by numerous small, widespread, symmetrical nodules of dense fibrous tissue in the lungs. *2: Tuberculosis with silicosis.* In this disease the nodules are less symmetrical in distribution, and they are larger than those in simple silicosis and contain the tubercle bacillus. Nearly all cases have previously been recognized as having had simple silicosis, and the latter in most cases is probably "a pathologically unqiue result of a tuberculous infection in a latently silicotic individual." *3: Tuberculo-silicosis*, usually appearing as if the tuberculous infection were superadded to silicosis, but occasionally seeming to have first been pulmonary tuberculosis (the latter called *silico-tuberculosis.*) By the end of seven years a little more than half the cases of simple silicosis have become tuberculous. It is interesting to note, however, that in no instance has the wife of one of these tuberculous individuals appeared to develop tuberculosis. Pathologically the nodules in uncomplicated silicosis consist of gray-black pigment and fibrous tissue and, as time goes on, they become more encapsulated, so that they may "shell out" of the capsule as small black pearls. In persons without tuberculosis, and after the lapse of many years, the nodules tend to disappear, the fibrous tissue becoming absorbed and the silica eliminated. When tuberculous infection is superadded, the result is pathologically different from that of uncomplicated tuberculosis, in that the distribution of pigment becomes asymmetrical and is increased about the foci of disease, which appear succulent and steel-gray, surrounding divided vessels, and not as the familiar lesions of ordinary tuberculosis. *Characteristic tubercles are wanting.* The young gray, fibrous tissue is prone to necrosis and cavitation. As to diagnosis, it is a great help to make periodical and simultaneous records of radiographic appearances of employees, and of their weight, and the exact nature of their work. The only early physical sign in simple silicosis is a loss of elasticity of the chest-wall and a high-pitched inspiratory murmur indicating lessened intake of air. The final diagnosis cannot be made, however, without a technically satisfactory radiograph. This shows a gradual increase in shadows normally cast by the connective tissue of the lung, followed by fine miliary stippling cast by the fibrous reaction about collections of dust rather than by the dust itself. Simple silicosis evolves without symptoms and, even when fully developed, is characterized by few symptoms except shortness of breath on exertion. Tuberculosis with silicosis is also detectable

first by the X-ray, which shows a shadow toward the apex or extending from the hilum, followed, usually within six months, by mottling around the shadow. Cough, pleurisy, and loss of weight and strength usually soon ensue. Because of liability to compensation in case of death, criteria as follows have been laid down for the post-mortem diagnosis of silicosis: (1) lesions must be specifically those of silicosis and must be visible to the unaided eye and palpable to touch (so microscopic evidence alone does not constitute a diagnosis); (2) lesions must be numerous enough for one nodule to be present in each 5 sq. cm. of pulmonary tissue, provided there is no evidence of silcio-tuberculosis. In the latter instance compensation must be granted even in the absence of other signs. If a miner develops simple silicosis in the mines, the shortest period in which he does so is about four and a quarter years, but for all who contract the disease the average period is about ten and a quarter years, and it is becoming increasingly longer. Only about 3 per cent of the total working miners and only about 7 per cent of those employed for ten or more years annually become silicotic. There has been a marked decline in the incidence of uncomplicated tuberculosis and of tuberculosis with silicosis. This latter situation may have arisen because of the relative increase in the number of older miners, practically all the cases being in persons in employment before 1916 when careful initial examinations were first required. The data above have been drawn from the records kept by the miners (Europeans) who have gone there for employment. Among the native laborers employed, the incidence of simple tuberculosis in 1923 was three and half times as great as that among the European workers, while simple silicosis was fifty-six times as great among the latter as among the former. The relative rarity of simple silicosis among the native laborers arises from the prevailing shortness of employment. It does not appear that the development of silicosis is influenced by age, race or individual peculiarity, except for the racial susceptibility of the native for tuberculosis. Candidates for employment who have cervical scars, or are underweight, or show unsymmetrical peribronchial thickening or "drop" or asthenic heart in the X-ray plate are turned down, because it has been learned that silico-tuberculosis is especially likely to develop if such persons are granted employment in the dust. The present compensation laws of South Africa classify silicosis as being of three stages: (1) *ante-primary*, when the earliest signs of the disease are or have been detectable, but before impairment of capacity to work has occurred; (2) *primary*, when signs are or have been present and the working capacity of the individual is or has been impaired by the disease; and (3) *secondary*, when signs and serious impairment of capacity for work exist (the "has or have been" referring to posthumous claims by relatives and not to healed disease). As to prognosis, data reveal that to every 1,000 deaths of cases beginning as simple silicosis, 170 deaths have occurred from other causes; to every 1,000 deaths from tuberculosis with silicosis and simple tuberculosis there have been 19 and 25 deaths, respectively, from other causes. "By the end of the seventh year, 29 per cent of cases originating as simple silicosis, 46 per cent of cases of simple tuberculosis, 86 per cent of cases of tuberculo-silicosis, and 89 per cent of cases of silico-tuberculosis, have died of their disease." A decided effort is being made to prevent the occurrence of silicosis and its complications by the use of both mechanical and medical precautions, such as the prohibition of dry drilling or blasting during work hours, the provision of clean air, etc., initial and periodical examinations, special examinations (sputum) and attention to individuals requiring them, and a well-worked out scheme of organization of the Medical Bureau. These measures have all justified themselves abundantly in the improvement of the general standard of health, the reduction of incidence of all forms of pulmonary tuberculosis from 259 per 100,000 in 1917–1918 to 90 in 1923–1924 among Europeans and from 576 to 328 for the same periods among native laborers, the appearance of simple silicosis in a less severe form and increased prospects of survival among such cases, a lengthening of the period of employment before the appearance of symptoms, and a decrease in the number of lesions found at autopsy. Of other diseases associated with silicosis, tuberculosis is naturally the most important; lobar pneumonia has been greatly reduced by prophylactic inoculation. Future progress may be looked for when more complete protection from dust is secured and when there is a more general recognition of the necessity of protecting the worker from tuberculosis.—*The Silicosis of the South African Gold Mines and the Changes Produced in It by Legislative and Administrative Efforts, W. Watkins-Pitchford, J. Industr. Hyg., April, 1927, ix, 109.*—(*H.S.W.*)

**Silicosis and Tuberculosis in Granite Workers.**—It is now the consensus of opinion that those dusts containing considerable *free* silica or quartz produce damage to the lungs when inhaled. There is a great deal of silicosis in the Barre, Vermont, gran-

ite region. The granite of these quarries, upon chemical analysis, contains approximately 70 per cent silica, but only 26 per cent free silica. Upon analysis of the air in five granite-cutting plants in Barre it was found that there were 2,397 particles per cubic centimetre, and that the workers inhaled almost 2,000,000 particles of dust with each breath. In making the diagnosis of silicosis, the history is of the greatest importance and should embrace the occupation, length of employment, social conditions, respiratory diseases, etc., the existence and duration of dyspnoea, cough, expectoration and pleural pain. Clinically there is, in general, diminished resonance and tactile fremitus, and lessening in the intensity of the breath-sounds. If the silicosis is uncomplicated, râles are absent. The blood-pressure is low and the vital capacity diminished. The X-ray plate is of very great value in diagnosis. Pathologically, the reaction consists of a massive fibrosis. The lymph nodes are firm and sandy. Tuberculosis is the most common complication. It usually, though not always, occurs after the age of forty-five, and with its onset the clinical picture changes into one of toxaemia, increased dyspnoea, pleural pains, fatigue, weakness and loss of weight, cough and expectoration, haemoptysis, fever and night-sweats. On physical examination there are usually localized dulness, further change in breath-sounds, râles, tubercle bacillli in the sputum, and characteristic X-ray appearances. The course is then usually rapid and the prognosis grave. There are rapid destruction of tissue with cavitation, and excessive development of strong, fibrous pleural adhesions. It is regrettable that pure silicosis and silicosis combined with tuberculosis are not more often differentiated. The person with the latter may be a menace to his fellows. The proportion of tuberculosis in the families of the granite-cutters is perhaps less than that among the general population, possibly because (1) the cutter develops his tuberculosis at a later age than the average and the opportunities for infecting children are therefore lessened, (2) the cutter is above average intelligence, makes good wages and provides well for his family, and (3) the course of the disease is rapid. There are, however, frequent instances of tuberculosis (and not uncommonly, meningitis) in such families. The death-rate (1917) from tuberculosis among the granite-cutters was 1,095.5 per 100,000 and that of the State at large only 96.4 per 100,000. It is urged that practising physicians pay more attention to the disease and that industry provide better dust-removing apparatus, etc.—*Silicosis and Tuberculosis as Seen in the Granite Workers in Barre, Vermont, W. McFarland, J. Industr. Hyg., August, 1927, ix, 315.*—(*H. S. W.*)

**Silicosis and Tuberculosis in Coal Miners.**—The incidence of silicosis among coal miners varies a great deal, depending upon the type of coal, geological composition of the rock in the immediate vicinity, the wetness or dryness of the particular mine, and other factors. Since the advent of machine drills for cutting through rock or earth "faults" which lie between or along seams of coal, there has been a noticeable incidence of pulmonary disease among the operators that had not been observable before. In certain bituminous mines in a restricted area, the dust from drilling the hard-ground faults and headings showed more than 50 to 60 per cent silica. Twenty-two cases were studied. The onset of the disease was slow. The average period of exposure before symptoms developed was 10.6 years and the average age 43.7 years. The most conspicuous symptom was dyspnoea. Loss of weight and lassitude were the rule. Occasionally pleurisy or cough occurred. Sputum was usually slight. On physical examination the chest was more or less rigid, there was dulness especially at the hilum and apices, bronchial or broncho-vesicular breath-sounds toward the hilum and distant breath-sounds elsewhere, especially at the bases, and fine crepitations and sibilant rhonchi near the root and at times over wide areas. There was an absence of fever even in four cases complicated with tuberculosis. Symptoms gradually increased in the disease, especially dyspnoea, cough, and loss of weight. Death usually supervened after three or four years, but it occurred twice in this series within fifteen months of the onset. Except when tuberculosis was present (6 cases) death was due to respiratory and cardiac failure. To date, 11 of the 22 cases have died, those with tubercle bacilli in the sputum dying, on an average, a few months earlier than the others. The X-ray is valuable in diagnosis, and, from classification of the plates on the basis of the recommendations from the South African mines, 16 of the 22 cases must be considered to have had tuberculosis also. By way of prevention the men employed in this particular type of drilling should all be registered, and have an initial and an annual physical examination, including X-ray examination. Those suspected of having tuberculosis should be excluded from the mines. Dry drilling should be abolished. The outlook will not be very promising unless such measures are adopted.—*The*

*Occurrence and Clinical Manifestations of Silicosis among Hard Ground Workers in Coal Mines, N. Tattersall, J. Industr. Hyg., November, 1926, viii, 466; also: J. State Med., April, 1927, xxv, 203.—(H. S. W.)*

**Experimental Silicosis and Tuberculosis.**—It has now been demonstrated (by the author and his coworkers) that silica is dissolved and absorbed after it is taken into the body, the soluble product then poisoning the protoplasm. If soluble silica—colloidal silicic acid—be injected subcutaneously into animals, there develops central necrosis, surrounded by granulation or organizing inflammatory fibrosis, which in time replaces the necrotic tissue with dense fibrous tissue that ultimately becomes a scar. The same results follow the injection of insoluble silica, the particles of which are not detectable in the reacting area, but after the injection of other dusts, such as carbon, oxide of iron, etc., no such reactions occur. Mine dust excites precisely the same necrotic reaction described above, and when insoluble silica oxide is placed in a celloidin sac and buried subcutaneously the same type of reaction follows, while similar sacs containing calcium chloride elicit no such response. It would therefore appear that the action of silica is a chemical one, brought about by hydrolysis of the silica in the tissues, the resulting soluble product being a protoplasmic poison. But in what way does the absorption of this product influence the development of tuberculosis in the body? Is it simply the mechanical effect of the pulmonary fibrosis or the clogging of the lungs with the dust? Most likely not. The lungs of coal miners are certainly clogged with dust, but such people are without a high mortality from pulmonary tuberculosis. When silica and tubercle bacilli are introduced together subcutaneously into mice, a great proliferation of bacilli occurs, probably because the coagulum of the silica lesion protects them from the cells which only later break in and then spread enormous numbers of bacilli. Other experiments of the author have shown that, if a silica-abscess be produced in one groin and some other irritating abscess (for example, by turpentine) in the other and the animal is then inoculated intravenously with tubercle bacilli, many more bacilli will be found subsequently in the silica-abscess than in the other. Results were inconclusive when animals were treated with silica and then inoculated with tubercle bacilli. The conclusion seems justified that the silicotic lung tends to become tuberculous not because it is fibrotic nor because there is interference with the drainage of lymph, but because of the presence of silica.—*Experimental Silicosis, E. H. Kettle, J. Industr. Hyg., November, 1926, viii, 491.—(H. S. W.)*

**Exposure to Silica without Resulting Silicosis.**—The usual end-result of fibrous and sclerotic pulmonary reaction following inhalation of silicious dust has been conspicuously absent among a group of men employed in the manufacture of ganister brick. Ganister rock is composed of silica sand and a varying amount of clay, and the presence of the latter may explain the failure of the dust to produce pulmonary fibrosis in the workers. Ganister dust produces silicosis in the lungs of those who mine it, but the ganister or silica sand of the restricted locality under review, while containing 86 per cent silica, has a content of clay which is nine times that of the millstone grit of the nearby quarries. Among these particular workers the incidence of pulmonary tuberculosis is remarkably low as compared with that of workers in nearby millstone or gritstone quarries and is lower than that of the general population. For the decade, 1911 to 1921, there was an average of 160 brickmakers and 350 gritstone workers resident in the same district. Among the former, for the decade, there occurred only one death from phthisis, an annual death-rate from the disease of 0.6 per thousand in that industry. But in the latter group during this period 19 died of phthisis (pulmonary tuberculosis), 8 of pulmonary fibrosis and one of haemoptysis, giving an annual death-rate per thousand of 5.43 for phthisis alone and of 7.71 for tuberculosis and fibrosis taken together. The average annual death-rate for the district for tuberculosis for that decade was 0.71 per thousand. It is interesting to observe that, although diseases due to dust were recognized at the time of Christ, no reference to an especial liability of stonecutters, quarrymen, etc., to pulmonary disease is found until the time of Ramazzini in 1703. This is probably explicable by the fact that much early Greek and Roman building was with limestone, rather than with sandstone.—*Exposure to Silica Dust without the Occurrence of Silicosis, P. Hefferman, J. Industr. Hyg., November, 1926, viii, 481.—(H. S. W.)*

**Pulmonary Tuberculosis and Heart.**—The small heart found in individuals dying of pulmonary tuberculosis is due to an atrophy that is part of the general cachexia. It is questionable whether the tachycardia, occurring with hilum lymph-node tuberculosis is dependent upon vagus injury. The fact that other sympathetic symptoms, like pupillary differences, are not rare, makes it more likely due to disturbance of the

sympathetic system. The abnormal vasomotor changes in so called masked tuberculosis need not be explained as occurring through the intermediation of the thyroid. A frequently observed enlargement of the thyroid seems to be one of the common concomitant symptoms of tuberculosis. The frequent shift in location of the heart is usually due to traction, the source of which lies in the diseased lung. The type of displacement is dependent upon the site of the tuberculosis, and, aside from the displacement, there occurs also a twisting of the heart on both the vertical and horizontal axes. The accentuation of both pulmonic tones is due to a better transmission of sound, and not to hypertrophy of the right ventricle. The accentuation of the second pulmonic tone alone is frequently attributable to kinking of the vessel. Murmurs of the second pulmonic, occurring with marked displacement to the left, are due to displacement of the lumen of the pulmonary artery. With displacement of the heart to the right the aortic tones are louder than the pulmonic. Pulmonary stenosis predisposes to pulmonary tuberculosis; mitral stenosis does not prevent pulmonary tuberculosis, but only exerts a protective influence when there is chronic passive congestion. In cases with a tendency toward haemorrhage there does not exist a high, but rather a low, blood pressure. The view that patients with a disposition toward haemorrhages are at an increased hazard at high altitudes, on account of increase in the blood-pressure is, therefore, not well founded.—*Über einige Beziehungen zwischen Lungentuberkulose und Herz, T. Janssen, Beitr. z. Klin. d. Tuberk., 1926, lxv, 170.*—(*H. J. C.*)

**Mitral Stenosis and Pulmonary Tuberculosis.**—*Case report:* A colonial, 36 years of age, was under observation for six years. He had repeated haemoptyses, attacks of pulmonary congestion, and at times his sputum contained tubercle bacilli. The apical fields were shadowed, the hilum markings increased, the left auricle was enlarged. This latter was the only sign of mitral stenosis for two years. Then he developed the typical rhythm of Duroziez. He had a positive Wassermann test and had contracted malaria.—*Poussées congestives pulmonaires tuberculeuses répétées au cours d'un rétrécissement mitral, G. Caussade and A. Tardieu, Meeting, Soc. Méd. d. Hôp., April 29, 1927, reported in Prog. Méd., May 21, 1927, no. 21, 816.*—(*M. P.*)

**Gastric Disturbances and Pulmonary Tuberculosis.**—The complaints of patients with pulmonary tuberculosis may be limited to gastric symptoms. Tuberculous adenitis of the tracheobronchial nodes may cause, by pressure on vagus and splanchnic nerves, gastric pain, at times dependent on the intake of food. In patients with the typical symptomatology of gastric or duodenal ulcer, in whom roentgenology and chemistry reveal normal gastric conditions, a swelling of the tracheobronchial lymph nodes may be found as the causative factor. *Tuberculosis fibrosa densa* and *diffusa*, usually associated with a splenic tumor, cause swelling of the regional lymph nodes. Such patients are frequently well nourished and in excellent general condition; at times they are emaciated and cachectic. Their musculature shows frequently a mechanical hyperirritability. Gastric symptoms may be caused by a neuritis of the phrenic nerve near the diaphragm or in the mediastinal pleura. Primary foci at the base or near the mediastinum, exudative pleuritis, chronic recurrent pleuritis, aspiration foci near the base, all may be productive of gastric symptoms. Any form of abdominal tuberculosis, frequently associated with some generalizing type of tuberculosis, must be considered as possible cause for gastric pain. It is important to know that reflex disturbances may cause hyperacidity; the finding of the latter is not an absolute criterion for gastric ulcer and against pulmonary tuberculosis.—*Über den Zusammenhang von Magenleiden und Lungentuberkulose, W. Neumann, Wien. klin. Wchnschr., October 6, 1927, xl, 1265.*—(*M. P.*)

**Gastric Ulcer and Pulmonary Tuberculosis.**—In reporting in detail 7 cases in which peptic ulcer and pulmonary tuberculosis were associated it is emphasized that peptic ulcer always renders the prognosis of the pulmonary disease much more grave. A newly developed ulcer may lead to an acute and malignant progression of the tuberculosis. This is attributed to the necessary restriction in diet. These observations suggest rather immediate therapeutic action in regard to the ulcer. It may be indicated to establish pneumothorax treatment first in order to prepare the patient's general condition for surgical interference. The trauma of the operation is always dangerous to the tuberculosis patient. In spite of this, the treatment should be radical because of the grave danger of recurrent haemorrhages and consecutive anaemia. Whether to use general or local anaesthesia, must be carefully considered in every individual patient. The ideal procedure, if possible, would be complete resection of the ulcer under local anaesthesia. In ulcers with stenosis gastroenterostomy may be sufficient.

The two chief dangers which threaten the patient suffering from a combination of pulmonary tuberculosis and peptic ulcer are undernourishment and postoperative pneumonia. Only the close coöperation between internist and surgeon promises satisfactory results.—*Ulcus pepticum und Lungentuberkulose. Zur Frage ihrer gegenseitegen Beeinflussung, A. Winkelbauer and A. V. Frisch, Wien. klin. Wchnschr., March 10, 1927, xl, 309.*—(*M. P.*)

**Treatment of Dyspepsia in Pulmonary Tuberculosis.**—Among the complications of pulmonary tuberculosis few are more commonly encountered than "dyspepsia." The loss of tonus, a certain amount of visceroptosis, the asthenic habitus and lability of the vegetative nervous system lead, first, to digestive disturbances and later to actual abnormalities in the secretion of ferments, which may usher in conditions of a more important nature, especially such as govern the growth of the intestinal flora. Irregularity of protein absorption contributes to this and leads to "putrefactive dyspepsia" and diarrhoea. In the treatment of this condition, attention should, therefore, be given to the bacterial flora of the intestines. Foods must be allowed which lead to a minimum of putrefaction, and supplementary feeding of milk sugar be employed only in the severer cases. Good results follow the administration of *Karbo-bolusal*, a preparation containing carbonic acid, bismuth and aluminium, three times a day, *a.c.*, in doses of two teaspoonfuls each. Foods that are completely digested often help. The reaction and the response to drugs of every patient are not the same, and one should understand the individual needs of the given patient if he is to get the best therapeutic result.—*Zur Behandlung von Darmdyspepsien bei Lungentuberkulose, E. Paulsen, Deutsche med. Wchnschr., July 15, 1927, liii, 1228.*—(*H. S. W.*)

**Haemolytic Jaundice Complicating Pulmonary Tuberculosis.**—It has been generally taught that tuberculosis does not occur in pernicious anaemia or haemolytic icterus. There has been recently, however, some departure from this general belief and the case reported here lends support to this newer idea. A man who had had haemolytic icterus for twenty years developed an exudative type of pulmonary tuberculosis, with many tubercle bacilli in the sputum. The case shows clearly that, in contrast to pernicious anaemia, hemolytic icterus and tuberculosis can coexist in the same patient.—*Die Beziehung der Tuberkulose zum hämolytischen Ikterus und zur perniziösen Anämie, J. Neuburger, Deutsche med. Wchnschr., June 10, 1927, liii, 997.*—(*H. S. W.*)

**Fatty Liver in Pulmonary Tuberculosis.**—The origin of the fatty liver as due to a lipolytic insufficiency, is believed to be more likely than Staemmler's idea of a diastase inhibition or that of a glycogen dissolution and subsequent fat deposition (Rosenfeld), in phthisis cases. Using the Wohlegemuth method, in which the hydrolysis of starch by liver extract was determined, no significant deviation in the diastase action of the fatty liver of phthisis cases was found. A significant parallelism between fermentative hydrolysis and histologically determinable fat and glycogen did not exist, nor was there any relation between fat and glycogen content in which an agonal disappearance of glycogen may have played a rôle. It is concluded that the Rosenfeld theory of the origin of a compensatory hepatic fat deposition correlated with glycogen paucity appears untenable.—*Weitere Mitteilung zum Problem der Fettleber bei Lungenschwindsucht, K. W. Clauberg, Virchow's Arch. f. path. Anat., 1926, cclxii, 74.*—(*H. J. C.*)

**Pulmonary Tuberculosis and Glomerulonephritis.**—The rarity of the coincident occurrence of two common diseases, diffuse glomerulonephritis and pulmonary tuberculosis, is pointed out, and four cases are recorded that died of typical uremia. The glomerulonephritis was the dominating disease. In two cases it was chronic and in two acute. In three of the cases the tuberculosis was the older disease. It is pointed out that pulmonary tuberculosis, with its prevalent low blood-pressure, cannot prevent the hypertonia of the kidney inflammation.—*Lungentuberkulose und Glomerulonephritis, J. Tillgren and T. Nyren, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 144.*—(*H. J. C.*)

**Nontuberculous Coxitis.**—Seven cases of chronic arthritis, with progressive subluxation and tendency to ankylosis, are reported. Five of these patients were seen again after three years with complete ankylosis of the joint.—*À propos des coxites non-tuberculeuse, Mornard, meeting, Soc. des Chirurgiens de Paris, June 17, 1927, reported in Prog. Méd., July 2, 1927, no. 27, 1051.*—(*U. E. Z.*)

**Addison's Disease and Diabetes.**—In a woman presenting clinical and chemical evidences of diabetes mellitus, associated with pigmentation, asthenia, low blood-

pressure and vomiting, the diagnosis of Addison's disease and diabetes mellitus was made. Autopsy bore out this diagnosis. Unusual therapeutic difficulties were encountered, owing to the existence of a hypersensitiveness to insulin and a marked tendency to ketosis, the former no doubt being due to suprarenal insufficiency.—*Addison's Disease and Diabetes Mellitus Occurring Simultaeeously, J. H. Arnett, Arch. Int. Med., May 15, 1927, xxxix, 698.*—(*W. I. W.*)

**Diabetes and Tuberculosis.**—Roentgen-ray studies of the chest were made on 182 cases of diabetes in an attempt to determine the frequency of pulmonary tuberculosis in diabetics. *Summary: 1:* Pulmonary tuberculosis was found complicating diabetes in 9 per cent of 182 patients. *2:* The pulmonary tuberculosis was frequently of the hilum or unsensitized form (46 per cent of 45 cases), and occurred most frequently in patients past forty-five years of age. *3:* The prognosis was uniformly poor, even with insulin.—*Diabetic Tuberculosis. M. C. Sosman and J. H. Steidl, Am. J. Roentgenol. & Rad. Therapy, June, 1927, xvii, 625.*—(*W. I. W.*)

**Juvenile Diabetes and Tuberculosis.**—*Case report:* A man, 19 years of age, was admitted to the hospital, excreting 700 gm. of glucose in twenty-four hours, with a polyuria amounting to 10 litres, and with an active tuberculosis in his left lung. He was treated with increasing amounts of insulin, receiving 148 clinical units at the time of the presentation, and with pneumothorax. After a little more than a year, he is in perfect general condition, he has gained more than 20 pounds, his tuberculous lesion is apparently arrested, and he excretes only 40 gm. of glucose in 24 hours, while the amount of his urine is normal.—*Diabète juvenile et tuberculose, Lenoir and Scherrer, meeting, Soc. Méd. d. Hôp., July 1, 1927, reported in Prog. Méd., July 9, 1927, no. 28, 1094.*—(*M. P.*)

**Diabetes, Pulmonary Tuberculosis and Insulin.**—These studies are based on observations on 40 patients who suffered from pulmonary tuberculosis and diabetes; they comprise 4 per cent of all diabetics observed during the same time. Exudative processes almost always gave a poor prognosis, but a number of favorable courses was observed. Five such cases are reported, in which exudative lesions, associated with severe diabetes, did astonishingly well. In almost all cases the inception or the progression of the pulmonary lesion was accompanied by a lowering of the carbohydrate tolerance. The opposite course is extremely rare, and is usually observed in cachectic tuberculous patients only. The nondiabetic tuberculous patient does not have a lowered blood sugar, and hypoglycaemic reactions during insulin treatment do not occur more frequently in the tuberculous, barring cases with high remitting fever, whose food intake is not well regulated. In most cases tuberculosis is secondary to diabetes; moderate and severe cases of diabetes tend towards exudative and destructive types, while mild diabetes favors the development of cirrhotic lesions. The usual insulin therapy does not alter these evolutions. Only "overinsulinization" helps to bring about productive changes in an originally exudative tuberculosis. Against the accepted views it is emphasized that pleuritis is often encountered in the diabetic tuberculous. Physical signs are frequently scanty, owing to the predilection for central lesions; X-ray studies, therefore, are very important. Ill effects of insulin treatment on the tuberculous processes have not been observed by the authors. The routine therapy is as follows: first the required amount of insulin, to produce aglycosuria with an intake of 24 gm. of carbohydrates, is determined. The carbohydrates are then quickly increased to 60 gm., with a simultaneous increase of insulin. Unless improvement is noticed "overinsulinization" is started, by increasing insulin by 4 units daily up to the limit of hypoglycaemic reactions and until normal blood-sugar values are obtained. At the same time it is attempted to establish a positive nitrogen balance. With this type of treatment favorable results were observed.—*Diabetes, Lungentuberkulose und Insulin, M. Rosenberg and J. Wolf, Klin. Wchnschr., May 14, 1927, vi, 936.*—(*M. P.*)

**Tumors and Tuberculosis.**—The mysterious idea of predisposition has not ceased to occupy students of constitutional diseases. It may be questioned whether malignant tumors have their way prepared by tuberculosis. A number of reports exist of the coexistence of these diseases. Letulle cites instances of cancerous pathological changes about the site of both active and fibroid tuberculous lesions of the lung, and J. and V. Jedlicka mention a tumor of the lung showing both lesions. Powell White of Manchester found such coexistence in 12 per cent of autopsies, believing the cancer to have developed first, however. Morse, at Yale, on the other hand, sees in the chronic irritation occasioned by tuberculosis, a source of cancer. He believes the same true of influenzal infections of the lungs. Rodenacher Wolfen incriminates both tuberculosis

and pneumoconiosis. Pallasse and Despeignes cite a case which also developed concomitant syphilis. The association of tuberculosis and cancer of the breast has also been described, and tuberculous degeneration of ovarian cysts (Dupont and Leroux, Pribram). Fanqué is so firmly of the opinion that genital tuberculosis predisposes to neoplasm that he advises surgical extirpation on these grounds. Hartmann and Rénaud have noted the association of these lesions in the large intestine and Lorrain presented in 1921 sections of a nasal tumor showing both types of lesion. Lénart has noted both changes in a tumor of a vocal cord, Wichmann in a small percentage of lupus cases. Reinhart believes in most cases the tuberculosis is chronic and inactive and that recent active tuberculosis is antagonistic to cancer. However it may be, their possible coexistence is certainly to be thought of, and all means of diagnosis should be used. —*La coëxistence dans le même organe de lésions tuberculeuses et néoplastiques, G. Ichok, Rev. d. l. Tuberk., August, 1926, vii, 625.*—(*A. P.*)

**Carcinoma on Basis of Lupus Vulgaris.**—A case of lupus of the face is described in a 15-year-old child, in which carcinoma developed with fatal issue to the patient. No metastases were found. In spite of the severe and widespread lupus there was only a mild right pulmonary apical tuberculosis, which would make it appear that the skin tuberculosis exerted an immunizing action upon infection in the other organs. The theoretical possibility exists that the X-ray treatment may have been the factor determining the development of the carcinoma, which was of mild grade.—*Zur Kasuistik der Carcinome auf dem Boden von Lupus vulgaris, F. Dietel, Beitr. z. Klin. d. Tuberk., 1926, lxiii, 667.*—(*H. J. C.*)

**Intrathoracic Tumors.**—The diagnosis of neoplasms in the chest can be materially aided by X-ray examinations. X-ray studies, however, must be correlated with careful history and physical examination. Secondary growths in the lungs are usually easily recognized. Mediastinal tumors to be detected are enlarged thymus, lymphadenopathy, and goitre, together with large masses caused by endothelioma or sarcoma. More rarely dermoid cysts, fibromata and neuromata are seen as large, rounded shadows displacing the lung on one side or the other. Fluoroscopy is helpful in ruling out aneurysm in the mediastinal space. Primary carcinoma appears in the upper lobes most frequently, and develops apart from the bronchus. The diagnosis must be substantiated by other findings than X-ray alone. When bronchial in origin the diagnosis by the X-ray depends on serial pictures which show a rapid growth of the tumor. The X-ray may be used as a palliative measure in the treatment of carcinoma or sarcoma of the lungs or mediastinal structures.—*Neoplasms of the Chest, J. E. A. Lynham, Tubercle, March, 1927, viii, 6.*—(*B. H. D.*)

**Surgery of Intrathoracic Tumors.**—With the increasing knowledge and use of surgery of the thorax, some aid is available in cases of neoplasm in the chest. Exploratory thoracotomy is justifiable and should be practised in cases in which every other diagnostic procedure has failed. The operation should be done through the seventh intercostal space, where, by spreading and manipulation, the best view can be had. If a benign tumor is seen it may be removed, or in the case of other types their exact nature may be determined. Occasionally well localized malignant tumors of the chest-wall or mediastinum may be removed. Secondary growths are not amenable to surgery.—*The Surgery of New Growths of the Chest, A. T. Edwards, Tubercle, March, 1927, viii, 6.*—(*B. H. D.*)

**Cancer of Lung.**—Carcinoma of the lung is apparently increasing in frequency, and in the majority of cases originates in the bronchus. Primary growths in the lungs now approximate 7 per cent of all primary carcinomata. A study of more than 200 cases shows that nine-tenths of the patients are past 35 years of age, and males predominate in the ratio of four to one. The left lung is somewhat more frequently involved than the right. The clinical picture varies greatly, the early symptoms being usually bronchial, commonly an early and continuous cough with wheezing, later on perhaps resembling the cough of aortic aneurysm. Of 90 cases analyzed, cough was present in all, expectoration in 89 per cent, haemoptysis and dyspnoea in approximately 60 per cent, and pain in 81 per cent. Foetid sputum is usually associated with secondary abscess formation. "Current-jelly" sputum is rarely encountered. Haemoptysis is a frequent and important symptom, and appears early, sometimes producing secondary anaemia. Both dyspnoea and pain are common and usually become progressively worse. The early physical signs are in general those of bronchial obstruction, and may change from day to day if the degree of obstruction varies. There is nothing specific in these signs. Tuberculosis is most frequently the diagnosis in pulmonary cancer. Fever is dependent largely on the presence of associated infec-

tion. Bronchial carcinoma has a relatively low malignancy and usually metastasizes late in its course, frequently to the bones and nervous system. The variability of the breath-sounds and the presence of râles are very suggestive in diagnosis, but bronchoscopy is most certain and should always be employed. The area can be seen and, if necessary, a portion of tissue can be removed. With early diagnosis the prognosis may not be hopeless. Endoscopic removal, although very rarely possible, can be successful only in the earliest stages. The main dependence must be on intensive roentgen-ray therapy.—*Primary Carcinoma of the Bronchi, T. McRae, E. H. Funk and C. Jackson, J. Am. M. Ass., October 1, 1927, lxxxix, 1140.*—(*G. L. L.*)

**Diagnosis of Intrathoracic Tumors.**—The material is presented under two headings: (1) history and early symptoms, and (2) the interpretation of physical signs. The importance of careful inquiry concerning symptoms, haemoptysis, bronchitis, and neurocardiac symptoms such as neurasthenia, tachycardia, cardiac irregularity and low blood-pressure, is stressed. The interpretation of signs resolves itself chiefly into a differentiation of tuberculosis and neoplasm as these are the diseases most difficult to diagnose, particularly when dealing with a primary neoplasm. The chief points of distinction are as follows:

| | PRIMARY NEOPLASM | TUBERCULOSIS |
|---|---|---|
| Age | Over 50 years | Commonly under 40 |
| Sex | Men more than women | Occupational factor more important |
| Onset | Similar | Similar |
| Loss of weight | Late symptom | Early symptom |
| Dyspnoea | Not relieved by rest | In proportion to extent of disease |
| Clubbing of fingers | Sometimes | Often seen |
| Pyrexia | Late manifestation | Irregular, early and late |
| Pain | Often present | Not often present |
| Pulse | Normal until late | Tachycardia early |
| Venous engorgement | Often present | Not often present |
| Physical signs | Usually unilateral and no adventitious sounds | Often bilateral with adventitious sounds |
| Pleural friction and effusion | 50 per cent of cases; often blood-stained | Clear fluid and not found so often |
| Sputum | Blood streaked, haemorrhages late | Haemorrhage early |
| Blood | No specific reaction | Positive complement-fixation test |

Intensive study of each case by every available means must be used in arriving at an accurate diagnosis.—*On the Diagnosis of Certain Chest Conditions with Special Reference to Intrathoracic Tumors, G. B. Price, Tubercle, March, 1927, viii, 6.*—(*B. H. D.*)

**Cancer of Lung.**—Two cases of primary cancer of the lung of alveolar origin are reported. The patients complained of severe generalized pains in the bones and rapid cachexia. Radiographic studies revealed early metastases in the skeleton. Such metastases from primary cancer of the lung are unusual. They are more commonly observed in cancer of the breast and prostate.—*Cancers du poumon à forme osseuse et douloureuse, Loeper and Garcin, Meeting, Soc. Méd. d. Hôp., July 15, 1927, reported in Prog. Méd., July 23, 1927, no. 30, 1169.*—(*U. E. Z.*)

**Primary Cancer of Lung.**—The material of the pathological institute of the University of Vienna during the years, 1896 to 1925, is analyzed in regard to the occurrence of primary pulmonary carcinoma. During this time 62,802 autopsies were performed; in 6,791 cases carcinomatous diseases were found; in 282 cases the carcinoma was found in the lung or in the bronchi. Both the absolute and the relative incidence of pulmonary carcinoma increased steadily. In 1896 the incidence was less than 0.1 per cent of all the autopsy cases. In 1924 it was about 2 per cent. The author believes that a true increase occurred, and that the influence of better diagnosis is not essential enough to explain the higher percentage. Three groups of tumors are distinguished: (1) carcinoma of the bronchial wall close to the hilum, (2) diffusely infiltrating types.

and (3) discrete tumors located in the centre of the pulmonary lobe. The majority of carcinomata were found in the right lung. The greatest incidence was in the age-group, 50–59, comprising 33.3 per cent of all. The sex distribution was 3 :1 for males and females. About 75 per cent were found in laborers, and 43 per cent of these belonged to occupations in which the respiratory organs are exposed to definite injuries. In 44 cases carcinoma was associated with pulmonary tuberculosis, but there was no indication that pulmonary tuberculosis played at all an etiological rôle in the development of cancer. In 17 per cent of the cases bronchiectasis was associated with carcinoma. They were all located peripherally from the stenosing tumor. This would indicate that they represent consequences and not causes. Other secondary changes were bronchopneumonic foci, empyema, atelectasis, serofibrinous or sanguinolent exudates in the pleural cavity. In 90 per cent of all cases metastases were found, the regional lymph-nodes being almost always affected. In the order of frequency the following organs contained metastases: liver, skeleton, kidneys, pleura, lungs, central nervous system, adrenals, pancreas, thyroid gland, ovaries, spleen, colon, skin, peritoneum, muscles, and parotid gland. A complete and correct clinical diagnosis was made in about one-fourth of the cases. This percentage increased, however, to 50 in the year 1925. In regard to the increase of pulmonary cancer the influence of inflammatory injuries and of mechanical and chemical stimuli is discussed. According to the statistics the cause for the increase must be of such a nature as to affect more or less the entire population. In this regard the influence of the increased smoking habit and the possible injuries brought about by the dust development and exhaust gases from motor cars are tentatively mentioned.—*Ueber das primäre Lungenkarzinom, K. Ferenczy and T. Maltolcsy, Wien. klin. Wchnschr., May 12, 1927, xi, 618.—(M. P.)*

**Primary Cancer of Lung.**—In a patient, aged 70, the clinical course of her disease was that of a haemorrhagic pachypleuritis with chronic bronchitis simulating pulmonary tuberculosis. Autopsy revealed the presence of pulmonary cancer of the serpiginous type. With its single and conglomerate nodules and multiple cavities, its macroscopic appearance was clearly that of pseudo-tuberculous. Histological studies showed that the lesions were derived from an epithelioma of bronchial origin. No associated tuberculous lesions were found. All the alveoli were involved by the neoplasm, and newly formed alveoli of epithelial origin made up of cylindrical cells and dust macrophages were seen. This last characteristic demonstrates the organogenic power of neoplastic cells. Matastases were observed in the various organs and in muscle tissue.—*Un cas de cancer primitif du poumon à forme anatomique pseudo-tuberculeuse, M. Loeper and R. Garcin, Prog. Méd., October 9, 1926, no. 41, 1518.—(U. E. Z.)*

**Primary Cancer of Lung.**—Twelve cases of primary carcinoma of the lungs are reported, 4 of which had metastases to the central nervous system. European statistics are to the effect that the incidence of primary carcinoma of the lungs in relation to epithelial malignant disease in general is disproportionately high; figures given indicate that it occurs there in from 5 to 6 per cent of all postmortems. In this country, similarly, an increase in the occurrence of primary carcinoma of the lungs has been noted in the last decade. Primary carcinoma of the lungs owes its statistical increase to (1) better diagnostic methods and (2) increased human longevity. The increase, therefore, is more apparent than real. A diagnosis of primary carcinoma of the lungs based on physical signs alone is never certain. Careful analysis of physical signs, combined with clinical observation and laboratory methods of investigation (roentgen rays, injection of iodized oil and bronchoscopy), makes the diagnosis of primary carcinoma of the lungs reasonably certain. Bronchoscopy, with removal of the tissue, is apparently the most reliable method. The wide distribution of metastases in primary carcinoma of the lungs is due to (1) peculiarities of its structure, that is, it is frequently soft and abundantly cellular, and (2) its slow growth, since rapidly growing tumors usually cause death of the patient long before metastases have time to develop. The frequent occurrence of cerebral metastases from primary pulmonary cancer, as compared with cancers from elsewhere in the body, is due to the absence of a barrier between the lungs and the brain. Metastases from elsewhere in the body on their way to the central nervous system pass primarily through the "sieve" of the lungs, in which they are usually "immured" and not infrequently perish. Metastases to the brain from a primary pulmonary cancer are, as a rule, haematogenous in character.—*Primary Carcinoma of the Lungs, B. M. Fried, Arch. Int. Med., September 15, 1927, xl, 340.—(W. I. W.)*

**Primary Cancer of Lung.**—A case is reported of a man, age 37, who complained of pain in his chest. It had been aspirated

four times, the fluid always being clear and straw-colored. On one occasion he expectorated a little blood over a period of a week. His condition grew worse, especially the pain in his right chest; he lost weight, developed vertigo, and became subject to syncopal attacks. Roentgen-ray studies revealed the beginning of a growth from the lower portion of the right hilum. Serial X-ray studies showed an increase in the size of the shadow, obstruction of the bronchus with atelectasis, and pleural effusion. The patient died and at autopsy the roentgenological diagnosis was confirmed. The roentgen-ray diagnosis of primary bronchogenic carcinoma of the lung depends upon the opportunity to examine early cases at frequent intervals, so that the progression of the disease may be noted. In such examinations it is necessary to be on guard for malignant tumor as the cause of so called silent pleural effusions, and to keep carcinoma in mind as the cause of atelectasis when we encounter the direct evidence of this condition, namely, the displacement of the mediastinal structures toward the side of the pathological lesion.—*A Case of Primary Carcinoma of the Lung, Showing both Atelectasis and Pleural Effusion. K. Kornblum, Am. J. Roentgenol. & Rad. Ther., September, 1927, xviii, 230.*—(*W. I. W.*)

**Histogenesis of Carcinoma of Bronchi.**—This study was undertaken in order to decide whether the inflammatory changes found in association with bronchial cancers are to be recorded as secondary consequences or as etiological factors in the development of the cancer. Four cases were carefully examined, especially in regard to alterations in the bronchial epithelium far removed from the site of the new growth. These 4 cases were squamous-epithelium carcinoma, with carnification and basal-cell carcinomas. In each case the bronchial epithelium in parts removed from the tumor showed marked alterations. Proliferation of cylindrical epithelium and metaplasia into squamous epithelium, papillary proliferations, and atypical proliferation of the epithelium were found. Since similar changes were frequently observed in metapneumonic conditions, particularly in children, the author concludes that marked inflammatory changes play an important rôle in the etiology of bronchial cancers and that the striking increase of this disease during the last decade must probably be attributed to the frequent respiratory infections during the influenza epidemics.—*Zur Histogenese des Bronchuskarzinoms. F. Feyrter, Wien. klin. Wchnschr., May 19, 1927, xl, 648.*—(*M. P.*)

**X-Ray Aspects of Primary Tumors of Lungs.**—Primary tumors of the lung are not so rare as is often supposed. They have been found in one-third of 1 per cent of all cases in which autopsies were performed. They comprise 1 per cent of all cancers and cause 2 per cent of all deaths due to pulmonary disease. The oncology of the lung includes carcinoma 55 per cent, sarcoma 9 per cent, various non-malignant tumors 25 per cent, and cysts 11 per cent. The age incidence is between fifty and sixty; 55 per cent of the tumors are found in the right lung, 35 per cent in the left, and 10 per cent are bilateral. The occurrence of fluid in the pleural space is variable, from 10 to 50 per cent, and apparently depends upon the stage of the disease. Fluid is less common in primary than in metastatic tumors of the lung. Cancer of the lung is most frequently carcinoma of the bronchus. Primary carcinoma of the alveolar epithelium is very rare, though it does exist. Carcinoma of the bronchus may be divided into two types: *first*, a type in which the direction of growth is predominantly into the lumen of the bronchus and which is thought to arise from the ciliated epithelium; *second*, a type in which the direction of growth tends to be away from or to encircle the bronchus, and which is thought to arise from the epithelium of the mucous glands. Metastasis may occur in either type, forming separate nodules in the lung or elsewhere in the body. Sarcoma generally simulates this second type of carcinoma, originating in the connective tissues under the epithelium of the bronchus. Teratomata are generally cystic, with smooth surfaces containing fluid and occasionally bone and teeth, or even parts of a fetus. When a bronchial carcinoma of the first type becomes large enough to block the bronchus the shadow of an atelectasis or massive collapse would be seen. If the tumor has a valve-like action a local emphysema may be produced, which would later give way to collapse. In such an atelectatic area a pneumonitis may occur, producing the shadow of consolidation. Fluid may also be found. The roentgen findings, then, may be divided into two classes; those in which the tumor mass itself produces the abnormal shadow and those in which the secondary effects and complications produce shadows. A shadow due to a tumor mass is more apt to be found in the later stages of the disease, and an understanding of the secondary effects becomes increasingly important with the desire for an early diagnosis. *Conclusions:* A correlation of the clinical and roentgenological findings is necessary for the diagnosis. Rarely the roentgen findings present features which are practically pathognomonic.

Among the more suggestive findings is a dense hilar mass with nodules and radiations extending into the lung field. The most common or typical lung tumor is a carcinoma of the right bronchial tree in a male in the fifties, which appears in the roentgen picture as a hilar shadow with radiations extending into a small immobile lung field, but which may be obscured by shadows of pneumonic or other complicating proecsses.—*The Roentgenological Aspects of Primary Tumors of the Lung, T. L. Hyde and G. W. Holmes, Am. J. Roentgenol. & Rad. Ther., September, 1927, xviii, 235.—(W. I. W.)*

**X-Ray Aspects of Cancer of Lung.**—A primary cancer of the lung became hollowed out by a voluminous suppurating pouch, forming a large cavity. What appeared to be secondary "cancerization" of the parietes of an abscess was in reality suppuration of an infected neoplastic mass. Radiographically the lesions showed marked variation. Within one month the lesion extended so as to give rise to a diffuse opacity over the upper lobe with ascension of the interlobar fissure. Later it presented the appearance of bread-crumbs, light and dark areas intermingling.—*Aspects radiographiques au cours du cancer des poumons, Garnier, Cathala, Ourmansky and Chêne, Meeting, Soc. Méd. d. Hôp., July 22, 1927, reported in Prog. Méd., August 13, 1927, no. 33, 1274.—(U. E. Z.)*

**Diagnosis of Pleuropulmonary Tumor in Child.**—The diagnosis of pleuropulmonary tumor in a boy, 11 years of age, was made from an enlarged axillary lymph node removed for biopsy. Radiologically and on physical examination a diagnosis of pleural effusion was made.—*Tumeur pleuro-pulmonaire chez un jeune sujet de 11 ans, Ameuille and Tacquet, Meeting, Soc. Méd. d. Hôp., July 22, 1927, reported in Prog. Méd., August 6, 1927, no. 32, 1246.—(U. E. Z.)*

**Diagnosis between Renal Tuberculosis and Tumors of Bladder.**—In certain groups of patients the differential diagnosis between these conditions is especially difficult. Such patients may be grouped as follows: (1) adults of advanced age, when malignant tumor is more common, who have haematuria alone or with a mild pyuria and present a negative subjective symptomatology and a negative history; (2) cases with negative objective findings; (3) cases in which search for tubercle bacilli is negative; (4) cases in which cystoscopy fails to give positive findings. In some of the latter cases it may be impossible to do proper cystoscopic examinations because of the severity of the vesical lesions. Cystoscopy often reveals only moderate oedema of the trigone, more or less ulcerated, or an oedema of the vesicoureteral orifice without any alterations in other parts of the bladder. The history of onset often extends back many years, during which the malignant process may have been running a benign course. Pain is not a constant feature. It is often slight, absent or ephemeral. Excluding the cases with gross changes, objective findings are often scarce. Extensive infiltration of tissue is frequently absent in malignant growths of the bladder. This often leads to the suspicion of tuberculosis especially if the oedema is localized to one or the other ureteral orifice. Radiographic studies offer little help. Changes in renal function, as determined by various dye tests, may occur in both conditions. *Conclusions: 1:* In the differential diagnosis between malignant tumor of the urinary bladder and renal tuberculosis with a secondary cystitis, the greatest difficulties are encountered when the history, objective examination and bacteriological studies of the urine fail to give decisive data, and when cystoscopic examination reveals only oedema of the trigone. *2:* In such cases the diagnosis may be only a probable one and a positive diagnosis possible only after death. *3:* In patients, whose findings may indicate a probable renal tuberculosis and in whom catheterization of the ureters is impossible, insufflation of air into the renal pelvis may be done, or a bilateral exploratory operation resorted to, with nephrectomy if one kidney is normal.—*Della diagnosi differenziale difficile fra tubercolosi urinaria e tumore vescicale infiltrante, E. Pirondini, Tubercolosi, September, 1927, xix, 345.—(U. E. Z.)*

**Tuberculosis of Axillary Lymph Nodes with Cancer of Breast.**—The author calls attention to the little-known and yet not rare tuberculous findings in the axillary lymph nodes in cases of carcinoma of the breast, without determinable tuberculosis in the path of related lymphatic drainage (absence of mammary tuberculosis). This circumstance is believed analagous to the transference of coal-pigment particles into the axillary lymph nodes from the lung through the chest-wall, which is only possible when there are adhesions of a tuberculous lung with the costal pleura or tuberculosis of the latter. "Pseudotubercle" in carcinoma and cancer metastases to the lymph nodes can lead to many diagnostic difficulties. Apparently the axillary lymph nodes are drainage points for the pleura, and through this also for the lungs.—*Tuberkulose der axillaren Lymphknoten bei Geschwülsten der Brustdrüse, P. Prym, Beitr. z. Klin. d. Tuberk., 1926, lxiii, 900.—(H. J. C.)*

**Chylothorax Due to Mediastinal Sarcoma.**—*Report of Case:* A girl, 5½ years of age, suffered for one month with much cough and dyspnoea. The entire left side was dull, and there was bronchial breathing over the left apex with sonorous râles. The fluid removed from the left pleural cavity had a milky appearance; it contained many very small fat droplets, many lymphocytes, phagocytes containing fat droplets, and a few erythrocytes. It contained 1 per cent of fat, 2 per cent cholesterol and 1.5 per cent protein. The X-ray picture showed a homogeneous shadow occupying the entire left lung field, extending without border into the mediastinal shadow. The right side of the shadow had a polycyclic border. The child did not react to tuberculin. The preliminary diagnosis of a left-sided chylous hydrothorax, caused by a sarcoma of the mediastinal lymph nodes, was confirmed at autopsy. The thoracic duct could not be followed in its entire length, since it was entirely embedded in tumor masses. The sarcomatous masses extended from the mediastinum along the thoracic wall and were found extending into the 11th and 12th thoracic vertebrae, into both kidneys, and surrounding both adrenals. Other metastases were found in the cervical lymph nodes, thyroid gland and submaxillary lymph nodes; the latter had perforated through the skin of the cheek. The stomach, intestines, long bones, pelvic and skull bones contained metastases. The histological examination confirmed the diagnosis of lymphosarcoma.—*Ein Fall von spontan entstandenem Chylothorax im Kindesalter, E. Fürth, Wien. klin. Wchnschr., March 17, 1927, xl, 350.*—(*M. P.*)

**Lymphogranulomatosis.**—In a patient suffering from lymphogranulomatosis, death occurred following a serohaemorrhagic pleuritis probably due to compression by the tumor mass. Histological examination of the lymph nodes and spleen showed typical lymphogranulomatous changes.—*Lymphogranulomatose, Betrand and Lemaire, Meeting, Soc. Méd. d. Hôp., May 20, 1927, reported in Prog. Méd., June 11, 1927, no. 24, 940.*—(*U. E. Z.*)

**Coexisting Syphilitic Laryngitis and Pulmonary Tuberculosis.**—A case is reported in which there was tuberculous infiltration of the upper lobe of the left lung, the sputum being found on repeated examinations positive for tubercle bacilli. Examination of the larynx revealed a condition regarded as tuberculous laryngitis. Two Wassermann tests were done, one being negative, the other one plus. Laryngeal smears were negative for tubercle bacilli. Six injections of neoarsphenamine were given, and in the fifth week there was considerable improvement in the patient's hoarsensess and cough. The sputum was markedly decreased, and his general condition improved rapidly, although all hygienic and dietetic measures before administering neoarsphenamine had been without avail. These findings emphasize the fact that active syphilis of the larynx may coexist with active pulmonary tuberculosis, and that the prognosis may be entirely different following the use of neoarsphenamine in doubtful laryngeal cases, even where the presence of the pulmonary lesion favors the diagnosis of tuberculous laryngitis.—*Coexisting Active Syphilis of the Larynx with Active Pulmonary Tuberculosis, D. L. Engelsher, J. Am. M. Ass., July 23, 1927, lxxxix, 284.*—(*G. L. L.*)

**Pulmonary Syphilis.**—Syphilis has a remarkable affinity for bronchial tissue. Clinical observation shows that sclerosing syphilis of the medium-sized and small bronchi is particularly important, its clinical manifestations being those of chronic bronchial catarrh associated with more or less extensive emphysema. In order to establish the diagnosis it is not sufficient to ascertain a syphilitic infection in the patient's past, but it is necessary to exclude any condition which may give rise to fibrotic processes, to show on careful examinations that the sputum does not contain any tubercle bacilli, and to make sure that the X-ray photograph does not show any discrete foci or calcified nodules. This affection must be distinguished from syphilitic bronchiectasis. It may exist in its simple form, or it may be associated with parenchymatous changes, or with pulmonary tuberculosis. In the latter case, the syphilitic infection will influence the tuberculous lesion to an essentially fibrotic evolution.—*Les formes bronchiques de la syphilis pulmonaire, Sergent and Benda, Meeting Acad. Méd., March 1, 1927, reported in Prog. Méd., March 26, 1927, no. 13, 475.*—(*M. P.*)

**Combined Pulmonary Tuberculosis and Pulmonary Syphilis.**—A case is reported in which pulmonary emphysema masked extensive tuberculosis. The occurrence of haemoptysis, the presence of tubercle bacilli in the sputum, the discrepancy between the severity of the pulmonary lesion and the excellent general condition of the patient, and dyspnoea led to the diagnosis. A positive Wassermann test and the marked improvement following specific treatment confirmed the diagnosis of associated syphilis.—*Un cas typique de syphili-tubercu-*

*lose du poumon, Melamet, Meeting, Soc. d. Méd. Paris, April 23, 1927, reported in Prog. Méd., May 21, 1927, no. 21, 818.—(M. P.)*

**Combined Pulmonary Tuberculosis and Pulmonary Syphilis.**—*Case report:* In a young woman the double diagnosis was established because she had paroxysms of dyspnoea and polypnoea, which are considered characteristic for syphilis. The auscultatory signs were characteristic for tuberculosis. The clinical diagnosis was confirmed by the demonstration of tubercle bacilli in the sputum and by a positive Wassermann test.—*Un cas de syphili-tuberculose pulmonaire, J. Sédillot, Meeting Soc. d. Méd. Paris, April 23, 1927, reported in Prog. Méd., May 21, 1927, no. 21, 818.—(M. P.)*

**Serological Diagnosis of Syphilis in Tuberculosis.**—In these studies, 1,178 sera were examined with the Wassermann, the Sachs-Georgi, and Meinicke's turbidity reaction. The latter two tests were positive, each in 8 sera in which the Wassermann reaction was negative. These were probably nonspecific results. This experience shows the importance of using more than one serological reaction. Among the positive patients there were a few in whom syphilis had not been suspected. In some of them antisyphilitic treatment was successful in causing to disappear symptoms that the previous treatment for tuberculosis had not influenced favorably.—*Ergebnisse obligatorischer Syphilisserodiagnostik an einem Tuberkulosekrankenhaus, R. Klingenstein, Klin. Wchnschr., August 27, 1927, vi, 1654.—(M. P.)*

**Ayerza's Disease.**—Ayerza's disease, which produces the black cardiac, is due to a sclerosis of the pulmonary arteries, often proved syphilitic in origin, and occurring as a sequel to a preceding chronic bronchitis. Certain outstanding features of this syndrome frequently occur in other disorders, and unless the clinical picture of chronic productive cough, dyspnoea, intense cyanosis, erythrocytosis, somnolence, headache, vertigo, angina hypercyanotica and haemoptysis, described by Ayerza, is substantiated by characteristic roentgen-ray and electrocardiographic findings, and by evidence of syphilis, the diagnosis cannot be assumed, unless the diagnosis is confirmed by autopsy findings. A brief review of the clinical, laboratory and pathological features of the syndrome is presented, and it is suggested that this term be restricted to those cases of pulmonary arteriosclerosis resulting in right-heart hypertrophy, which are due to syphilis. Two case reports are presented. In the first the diagnosis was definite, and confirmed by macroscopic and microscopic examination of the autopsy material. The second was not definite, but presented the evidence on which a presumptive clinical diagnosis could be made. A survey of the literature includes all known cases and emphasizes the rarity of the malady.—*Ayerza's Disease, G. Cheney, Am. J. Med. Sc., July, 1927, clxxiv, 34.—(W. I. W.)*

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